

2. Guidelines for Exterior Maintenance and Alterations

City of San Antonio Historic Design Guidelines

Office of Historic Preservation



CONTENTS

Introduction 1

Applicability 1

Causes of Deterioration 2

Guidelines 2

Materials: Woodwork 4

Materials: Masonry and Stucco 6

Materials: Roofs 8

Materials: Metal 12

Architectural Features: Lighting 14

Architectural Features: Doors, Windows, and Screens 16

Architectural Features: Porches, Balconies, and Porte-Cocheres 20

Architectural Features: Foundations 22

Outbuildings, Including Garages 24

Commercial Facades 26

Canopies and Awnings 28

Increasing Energy Efficiency 30

Using the Historic Design Guidelines

The City of San Antonio Historic Design Guidelines (“Historic Design Guidelines”) establish baseline guidelines for historic preservation and design. The Historic Design Guidelines apply to all **exterior** modifications for properties that are individually designated landmarks or within a locally designated historic district. All applicants are encouraged to review the Historic Design Guidelines early in their project to facilitate an efficient review process. In addition to compliance with the Unified Development Code (“UDC”), applicants must obtain a Certificate of Appropriateness (“COA”) from the Office of Historic Preservation (“OHP”) for all proposed exterior modifications as described in the Using the Historic Design Guidelines section of the Historic Design Guidelines. The Historic Design Guidelines are comprised of eight sections as follows:

- 1. Using the Historic Design Guidelines
- **2. Guidelines for Exterior Maintenance and Alterations**
- 3. Guidelines for Additions
- 4. Guidelines for New Construction
- 5. Guidelines for Site Elements
- 6. Guidelines for Signage
- 7. A Guide to San Antonio’s Historic Resources
- 8. Glossary

The Historic Design Guidelines as a whole are intended to work congruently with other sections, divisions and articles of the UDC but have been separated into individual sections for ease of use. In the event of a conflict between other sections or articles of the UDC and these Historic District Guidelines, the Historic District Guidelines shall control except in the case of signage where the more strict regulation or guideline shall control. Additionally, if an exception from the application of Chapter 28 of the city code of San Antonio has been approved for signage in historic districts, such exception shall remain unless removed by official action of the City Council. The meaning of any and all words, terms or phrases in the Historic District Guidelines shall be construed in accordance with the definitions provided in Appendix A of the UDC. In the case of a conflict regarding a definition as provided in these guidelines and Appendix A of the UDC, the Historic District Guidelines definition shall control. All images courtesy of the City of San Antonio, Clarion Associates, and Hardy, Heck, Moore, Inc. unless otherwise noted.

For questions and guidance please contact the Office of Historic Preservation: Email: ohp@sanantonio.gov | Phone: 210.215.9274

Copyright © 2012 City of San Antonio

Why Preserve?

A message from Historic Preservation Officer, Shanon Shea Miller

We strive to preserve San Antonio's historic buildings and neighborhoods for many reasons. We recognize and celebrate the cultural, aesthetic, environmental and economic value historic preservation brings to San Antonio. It is by definition sustainable and is a proven economic development tool. No example in this country of successful central city revitalization has occurred without preservation as a component.



- Preserving our built environment helps tell the **story** of San Antonio's long, rich and diverse history. Taking care of our older buildings and neighborhoods provides a sense of belonging, a collective memory, and a sense of pride in our past. Preservation is about understanding that historic buildings are limited resources and we must be careful to preserve those that tell our many and varied stories. This includes not just major historic sites but neighborhood schools and parks, streets lined with bungalows, theaters, small-scale commercial buildings, shot gun houses, gas stations, and towering downtown landmarks.
- Preservation helps build strong **neighborhoods** by protecting their character. Preservation programs foster community pride, appreciation of history, learning, creativity, and a sense of place, thus making historic neighborhoods desirable places to live and work.



- Preservation is good for the **economy**. Reinvesting in our historic buildings and neighborhoods helps to stabilize our property values and community, and promotes tourism and economic development. Historic preservation is more labor-intensive than new construction and generally utilizes more local materials. Every time a building is rehabilitated or reused, specialized trades and skilled laborers are employed. This creates jobs and puts more money into our local economy.

- Additionally, historic preservation contributes to the **tourism** industry in our city. Studies have shown that the heritage visitor stays longer and spends more than any other category of visitor. These people are looking for the jewels that locals cherish...often it's our historic buildings and neighborhoods that provide that sense of place and community that attracts visitors, while contributing to the quality of life for local citizens. As Donovan Rypkema says, "Place is not a synonym for location. Place is a location that has been claimed by feelings." For that and many other reasons, historic preservation is good for the local economy!

- Preservation helps protect the **environment**. Reusing and adapting historic buildings and neighborhoods reduces our consumption of raw land, new materials, and other resources. Rehabilitating existing buildings and maintaining existing materials are sustainable solutions and are most often more cost effective over the life of the building than replacement or new construction. Fortunately the green movement is recognizing that the greenest building ever built is the one that already exists! Stewardship of the built environment is sustainability as well as preservation.



We want our neighborhoods and commercial districts to continue to tell the story of San Antonio's history to those who come after us. This can best be done by preserving the condition of our historic resources and giving them new life and new purpose by making them our homes and places of business. The Historic Design Guidelines are intended to serve the community as we work together to preserve San Antonio's historic resources to provide a quality environment for future generation ***Preservation is not about longing for the past or resisting progress. It's about building on the past toward the future.***

Sharon

"Historic preservation has become a fundamental tool for strengthening American communities. It has proven to be an effective tool for a wide range of public goals including small business incubation, affordable housing, sustainable development, neighborhood stabilization, center city revitalization, job creation, promotion of the arts and culture, small town renewal, heritage tourism, economic development, and others."

– Donovan Rypkema, *Measuring Economic Impacts of Historic Preservation*, 2011



2. Guidelines for Exterior Maintenance and Alterations

Introduction

These guidelines provide general guidance to property owners, design professionals, homeowners, and decision-makers regarding the exterior maintenance and alterations of historic buildings; they are not intended as a substitute for consultation with qualified architects, contractors, attorneys, City of San Antonio staff, and/or the Historic and Design Review Commission (“HDRC”). All applicants are responsible for the professional, legal, and/or other services required for their project.

Countless variables in design, construction techniques, and materials exist within San Antonio’s historic districts. District-specific guidelines address issues or elements that are unique within individual historic districts.

Routine maintenance of properties will increase the performance and lifespan of materials. If maintained, original or historic materials are not as likely to require replacement in the future. This results in savings in both an economic and environmental sense. A list of supplemental resources related to specific topics, building materials, and features is provided at the end of each topic in this chapter.

The International Existing Building Code (“IEBC”) makes provisions for the safety and stability of existing and historic properties. Historic property owners should consult with OHP staff before implementing any changes that may be required by most modern building codes to explore flexibility allowed for in the IEBC.

Applicability

The Historic Design Guidelines generally apply to all **exterior** modifications to properties that are located within a locally designated historic district or that are individually designated landmarks. This section specifically applies to all residential properties and non-residential or mixed-use properties as follows:

- Routine exterior maintenance and repair (preservation) of a historic structure and features; and
- Rehabilitation, restoration, and reconstruction of individual features of a historic structure.

The terms preservation, rehabilitation, restoration, and reconstruction are defined in *Using the Historic Design Guidelines*.

General Principles

The following General Principles for Exterior Maintenance and Alterations will be considered during the review process in conjunction with the guidelines contained in this section.

Principle #1: Routine Maintenance is Essential for Preservation

With proper maintenance, most historic buildings can last for centuries. Poorly functioning gutters, downspouts, and flashing; standing water at foundations; water splashing onto walls from the surrounding hard surfaces; and water-entrapping vegetation such as vines and shrubs on or near walls and foundations can all contribute to the deterioration of historic structures. Each of these issues can be prevented or corrected through proper maintenance.

Principle #2: Preservation of Features in Place is Preferred Over Replacement

Maintaining and repairing features is preferred over replacing features as to maintain the high-quality materials, character, and embodied energy of historic buildings and to reduce the amount of waste that goes to a landfill. However, if features are deteriorated beyond repair (more than 50%), in-kind replacement using new components that match the original in form, finish, and materials is favored while replacement with comparable substitutes will be considered.

Principle #3: More Flexibility in Treatment and/or Replacement May be Considered in Locations Not Visible from the Public Right-of-Way

Building features not visible from the public right-of-way are less likely to detract from the character of the structure or district. More flexibility in the treatment and/or replacement of features in these locations may be considered if the historic integrity of the structure has already been lost or compromised and/or other unique circumstances exist that warrant consideration of a more flexible approach. However, the OHP will review proposed alterations on a case-by-case basis to determine whether they are appropriate.

Causes of Deterioration

Common causes of deterioration in historic structures include: insufficient exterior maintenance, water infiltration, insects, and vegetation.

Insufficient Exterior Maintenance

Seasonal inspections to check for items such as clear gutters and downspouts and peeling paint paired with timely repair can prevent deterioration of exterior building elements.



Regular maintenance and repair can prevent deterioration of exterior building elements like this porch and foundation.



An improperly maintained foundation can allow water infiltration and hasten the deterioration of historic structures.

Insects

Termites, carpenter ants, and other insects can seriously damage buildings once they find their way inside. It is imperative to keep historic buildings sealed through proper maintenance and repair and to minimize the buildup of soil and moisture where the foundation of the building meets the ground to prevent the introduction of insects and other pests.

Water Infiltration

Generally triggered by lack of maintenance, water infiltration can lead to or hasten deterioration of historic structures. Poorly functioning gutters, downspouts, and flashing; standing water at foundations; water splashing onto walls from the surrounding hard surfaces; and water-entrapping vegetation such as vines and shrubs on or near walls and foundations can all contribute to deterioration.

Improperly painting surfaces and adding impermeable layers, such as sealants, latex paint, or metal or vinyl siding, can prevent materials from breathing and result in deterioration.

Vegetation

Vegetation allowed to grow near the foundation of a historic building or on the building surface traps moisture and can accelerate the deterioration of building materials, especially mortar joints and wood materials.

Guidelines

This section contains guidelines for exterior maintenance and alterations in the following categories:

Materials

- Woodwork
- Masonry and Stucco
- Roofs
- Metal

Architectural Features

- Lighting
- Doors, Windows, and Screens
- Porches, Balconies, and Porte-Cocheres
- Foundations

Outbuildings, Including Garages

Commercial Facades

Canopies and Awnings

Increasing Energy Efficiency

These guidelines contain numerous pictures, illustrations, drawings, and examples of projects that have successfully met, or failed to meet, the qualities that the guidelines address. Examples are provided only to illustrate and show context. They shall not be construed as the only possible design solutions allowed.

In considering whether to recommend approval or disapproval of an application for a COA for exterior maintenance and alterations, the HDRC shall be guided by the Secretary of the Interior's Standards for Rehabilitation, the UDC, the Historic Design Guidelines, and any additional design guidelines adopted by the City.

Additional Resources

Throughout this section, additional resources are offered for each topic. The resources below are generally applicable to all maintenance and alterations topics.

Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing, Preservation Brief #37, by Sharon C. Park, AIA and Douglas C. Hicks.
<http://www.nps.gov/history/hps/tps/briefs/brief37.htm>

Case Studies in Historic Preservation, Preservation Tech Notes from the National Park Service. <http://www.nps.gov/tps/how-to-preserve/tech-notes.htm>

Dangers of Abrasive Cleaning to Historic Buildings. Preservation Brief #6, by Anne E. Grimmer.

<http://www.nps.gov/history/hps/tps/briefs/brief06.htm>

Holding the Line: Controlling Unwanted Moisture in Historic Buildings, Preservation Brief #39, by Sharon C. Park, AIA.
<http://www.nps.gov/history/hps/tps/briefs/brief39.htm>

Maintaining the Exteriors of Small and Medium Size Historic Buildings, Preservation Brief #47, by Sharon Park, FAIA.
<http://www.nps.gov/history/hps/tps/briefs/brief47.pdf>

The Use of Substitute Materials on Historic Building Exteriors, Preservation Brief #16, by Sharon C. Park, AIA.
<http://www.nps.gov/history/hps/tps/briefs/brief16.htm>

Did you know?

The City of San Antonio adopted the 2012 version of the International Existing Building Code (IEBC). This building code encourages the reuse of existing and historic buildings through repair, alteration, addition, and change of occupancy.

Build San Antonio Green is a non-profit organization that promotes green building methods, materials, and technologies. They work with homeowners and builders to certify green homes to reduce energy consumption. See <http://www.buildsagreen.org> for more information.

STAR (Students Together Achieving Revitalization) is a partnership between the Office of Historic Preservation, the UTSA College of Architecture and San Antonio College, and local contractors to provide minor exterior home repairs and maintenance to homeowners within local historic districts.

1. Materials: Woodwork

Why is this Important?

All building materials will deteriorate over time. The deterioration of exterior woodwork is particularly affected by environmental influences such as moisture, humidity, sunlight, wind, insects, vegetation, molds, and algae. However, a regular program of repair and maintenance can slow the rate of deterioration dramatically. When damage has already occurred, the use of proper rehabilitation techniques can help restore a building's structural integrity and historic character.



Repair of deteriorated or damaged exterior woodwork, such as these porch elements, is preferred over replacement. (Photos: Ron Bauml, San Antonio Conservation Society)

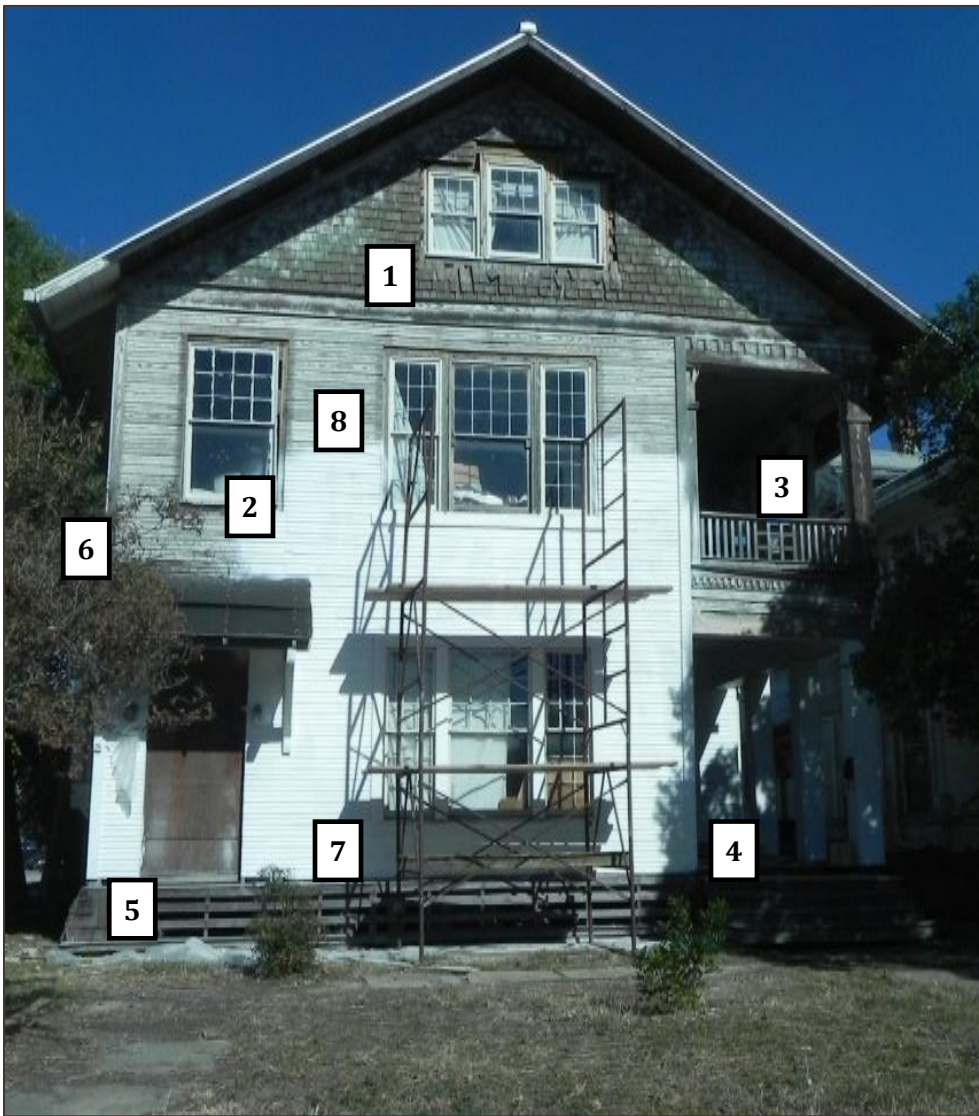
Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Inspections**—Conduct semi-annual inspections of all exterior wood elements to verify condition and determine maintenance needs.
- ii. **Cleaning**—Clean exterior surfaces annually with mild household cleaners and water. Avoid using high pressure power washing and any abrasive cleaning or stripping methods that can damage the historic wood siding and detailing.
- iii. **Paint preparation**—Remove peeling, flaking, or failing paint surfaces from historic woodwork using the gentlest means possible to protect the integrity of the historic wood surface. Acceptable methods for paint removal include scraping and sanding, thermal removal, and when necessary, mild chemical strippers. Sand blasting and water blasting should never be used to remove paint from any surface. Sand only to the next sound level of paint, not all the way to the wood, and address any moisture and deterioration issues before repainting.
- iv. **Repainting**—Paint once the surface is clean and dry using a paint type that will adhere to the surface properly. See *General Paint Type Recommendations* in Preservation Brief #10 listed under Additional Resources for more information.
- v. **Repair**—Repair deteriorated areas or refasten loose elements with an exterior wood filler, epoxy, or glue.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Facade materials**—Avoid removing materials that are in good condition or that can be repaired in place. Consider exposing original wood siding if it is currently covered with vinyl or aluminum siding, stucco, or other materials that have not achieved historic significance.
- ii. **Materials**—Use in-kind materials when possible or materials similar in size, scale, and character when exterior woodwork is beyond repair. Ensure replacement siding is installed to match the original pattern, including exposures. Do not introduce modern materials that can accelerate and hide deterioration of historic materials. Hardiboard and other cementitious materials are not recommended.
- iii. **Replacement elements**—Replace wood elements in-kind as a replacement for existing wood siding, matching in profile, dimensions, material, and finish, when beyond repair.



Through an extensive rehabilitation effort, the structural and visual integrity of this historic structure will be recovered.

Maintenance and Alteration Checklist for Woodwork

- 1** Replace missing or damaged siding with in-kind materials.
- 2** Repair or replace rotted sills and caulk around window and door frames.
- 3** Replace missing balustrades and rotted wood decking.
- 4** Check porch steps for rot and that paint surface is intact.
- 5** Restore missing porch steps
- 6** Clear vegetation away from house and foundation to reduce moisture retention.
- 7** Check foundation for rot and replace decorative shingle skirting.
- 8** Inspect and repair all exterior wood work, then scrape and sand surface to remove flaking paint before priming and painting. Avoid pressure washing immediately prior to painting; this could lead to the retention of moisture which prevents paint from sticking and ultimately could damage the siding.

Additional Resources

Exterior Paint Problems on Historic Woodwork, Preservation Brief #10, by Kay D. Weeks and David W. Look, AIA.
<http://www.nps.gov/history/hps/tps/briefs/brief10.htm>

2. Materials: Masonry and Stucco

Why is this Important?

The use of masonry (brick or stone construction) and stucco construction is common in many of San Antonio's districts and is an important character-defining feature. If properly maintained, these materials can last for centuries. However, improper maintenance and repair can result in deterioration. Where deterioration has already occurred, proper rehabilitation techniques can be used to restore a building's structural integrity and historic character.



With proper maintenance, masonry structures can last for centuries. Many of the oldest structures in San Antonio are masonry such as the Missions and the Spanish Governor's Palace and date to the mid-eighteenth-century.



Stucco finishes are typical of Spanish Eclectic and Mission Revival-style homes, among others common in San Antonio.

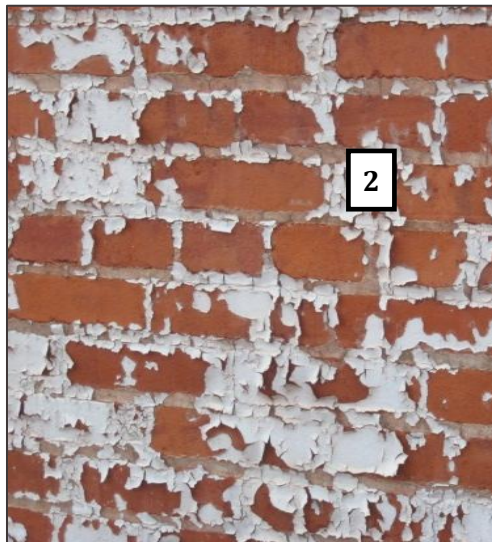
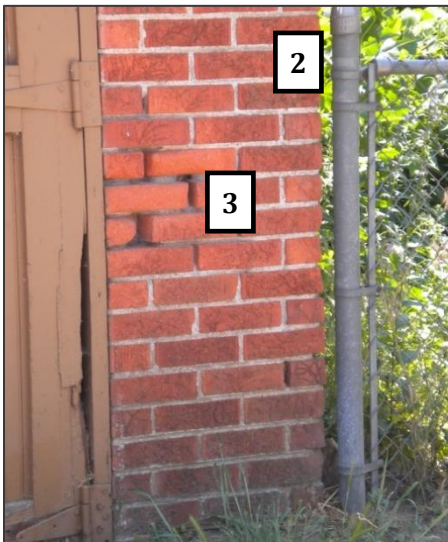
Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Paint**—Avoid painting historically unpainted surfaces. Exceptions may be made for severely deteriorated material where other consolidation or stabilization methods are not appropriate. When painting is acceptable, utilize a water permeable paint to avoid trapping water within the masonry.
- ii. **Clear area**—Keep the area where masonry or stucco meets the ground clear of water, moisture, and vegetation.
- iii. **Vegetation**—Avoid allowing ivy or other vegetation to grow on masonry or stucco walls, as it may loosen mortar and stucco and increase trapped moisture.
- iii. **Cleaning**—Use the gentlest means possible to clean masonry and stucco when needed, as improper cleaning can damage the surface. Avoid the use of any abrasive, strong chemical, sandblasting, or high-pressure cleaning method.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Patching**—Repair masonry or stucco by patching or replacing it with in-kind materials whenever possible. Utilize similar materials that are compatible with the original in terms of composition, texture, application technique, color, and detail, when in-kind replacement is not possible. EIFS is not an appropriate patching or replacement material for stucco.
- ii. **Repointing**—The removal of old or deteriorated mortar should be done carefully by a professional to ensure that masonry units are not damaged in the process. Use mortar that matches the original in color, profile, and composition when repointing. Incompatible mortar can exceed the strength of historic masonry and results in deterioration. Ensure that the new joint matches the profile of the old joint when viewed in section. It is recommended that a test panel is prepared to ensure the mortar is the right strength and color.
- iii. **Removing paint**—Take care when removing paint from masonry as the paint may be providing a protectant layer or hiding modifications to the building. Use the gentlest means possible, such as alkaline poultice cleaners and strippers, to remove paint from masonry.
- iv. **Removing stucco**—Remove stucco from masonry surfaces where it is historically inappropriate. Prepare a test panel to ensure that underlying masonry has not been irreversibly damaged before proceeding.



Top photo: Echo Park Historical Society, historicechopark.org

Maintenance and Alteration Checklist for Masonry and Stucco

- 1** Remove stucco from masonry surfaces where historically appropriate.
- 2** Avoid painting historically unpainted surfaces. Painting previously unpainted surfaces such as brick and masonry traps moisture and can result in peeling and sloughing and permanent damage.
- 3** Repoint masonry with compatible mortar and matching joint profile and composition.

Additional Resources

Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings, Preservation Brief #3, by Robert Mack, FAIS and Annie Grimmer. <http://www.nps.gov/history/hps/tps/briefs/brief01.htm>

Removing Graffiti from Historic Masonry, Preservation Brief #38, by Martin E. Weaver. <http://www.nps.gov/history/hps/tps/briefs/brief38.htm>

Repointing Mortar Joints in Historic Masonry Buildings, Preservation Brief #2, by Robert Mack, FAIA, and John Speweik. <http://www.nps.gov/history/hps/tps/briefs/brief02.htm>

The Preservation and Repair of Historic Stucco. Preservation Brief #22, by Anne Grimmer. <http://www.nps.gov/history/hps/tps/briefs/brief22.htm>

3. Materials: Roofs

Why is this Important?

A weather-tight roof is essential to the preservation of a structure, regardless of its age, size, or architectural style. With regular maintenance, many of the historic roofing materials found in San Antonio's historic districts—such as slate, clay tile, and cement tile, and metal—can have a life span of more than fifty years. Other more typical roofing materials, such as asphalt or wood shingles or shakes, typically have a lifespan of 20-30 years. When damage has already occurred due to lack of maintenance or severe weather, proper rehabilitation is essential to ensure the historic integrity and character of the building is maintained.



Roof materials in San Antonio's historic districts are diverse. Barrel-rolled clay tiles (top) and standing seam metal (bottom) are just two examples. (Photos: Ron Bauml, San Antonio Conservation Society)

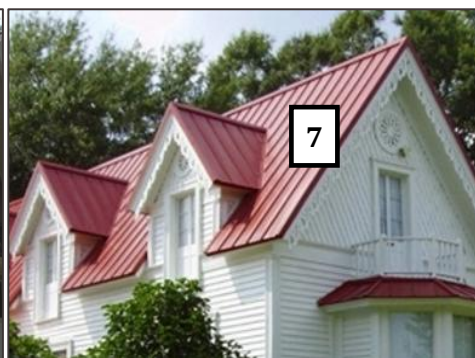
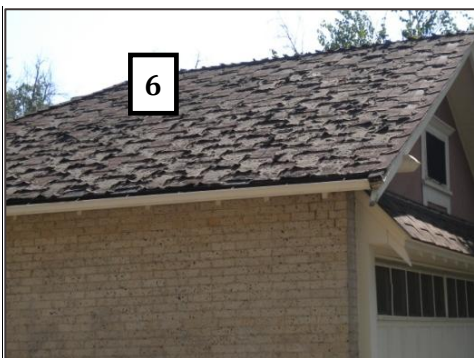
Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Regular maintenance and cleaning**—Avoid the build-up of accumulated dirt and retained moisture. This can lead to the growth of moss and other vegetation, which can lead to roof damage. Check roof surface for breaks or holes and flashing for open seams and repair as needed.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Roof replacement**—Consider roof replacement when more than 25-30 percent of the roof area is damaged or 25-30 percent of the roof tiles (slate, clay tile, or cement) or shingles are missing or damaged.
- ii. **Roof form**—Preserve the original shape, line, pitch, and overhang of historic roofs when replacement is necessary.
- iii. **Roof features**—Preserve and repair distinctive roof features such as cornices, parapets, dormers, open eaves with exposed rafters and decorative or plain rafter tails, flared eaves or decorative purlins, and brackets with shaped ends.
- iv. **Materials: sloped roofs**—Replace roofing materials in-kind whenever possible when the roof must be replaced. Retain and re-use historic materials when large-scale replacement of roof materials other than asphalt shingles is required (e.g., slate or clay tiles). Salvaged materials should be re-used on roof forms that are most visible from the public right-of-way. Match new roofing materials to the original materials in terms of their scale, color, texture, profile, and style, or select materials consistent with the building style, when in-kind replacement is not possible.
- v. **Materials: flat roofs**—Allow use of contemporary roofing materials on flat or gently sloping roofs not visible from the public right-of-way.
- vi. **Materials: metal roofs**—Use metal roofs on structures that historically had a metal roof or where a metal roof is appropriate for the style or construction period. Refer to Checklist for Metal Roofs on page 10 for desired metal roof specifications when considering a new metal roof. New metal roofs that adhere to these guidelines can be approved administratively as long as documentation can be provided that shows that the home has historically had a metal roof.
- vii. **Roof vents**—Maintain existing historic roof vents. When deteriorated beyond repair, replace roof vents in-kind or with one similar in design and material to those historically used when in-kind replacement is not possible.



Maintenance and Alterations Checklist for Roofs

- 1** Preserve the original roof shape and overhang when replacement is necessary.
- 2** Preserve and repair distinctive roof features.
- 3** Replace sloped roofing materials with in-kind materials when possible.
- 4** Clean gutters and downspouts regularly to prevent water damage to historic materials.

Match downspouts and gutters to those historically used or to the color and finish of the building as to not distract from the character of the building.
- 5** Inspect roofs regularly and replace before deterioration of the roof surface reaches significant levels.
- 6** A modern standing seam metal roof may not be a suitable replacement for historic standing seam metal roofs. Roof shown is not an appropriate application in terms of profile, color, and detailing.
- 7**

Additional Resources

Roofing for Historic Buildings, Preservation Brief #4, by Sarah M. Sweetser.
<http://www.nps.gov/history/hps/tps/briefs/brief04.htm>

The Preservation and Repair of Historic Clay tile Roofs, Preservation Brief #30, by Anne E. Grimmer and Paul K. Williams.
<http://www.nps.gov/history/hps/tps/briefs/brief30.htm>

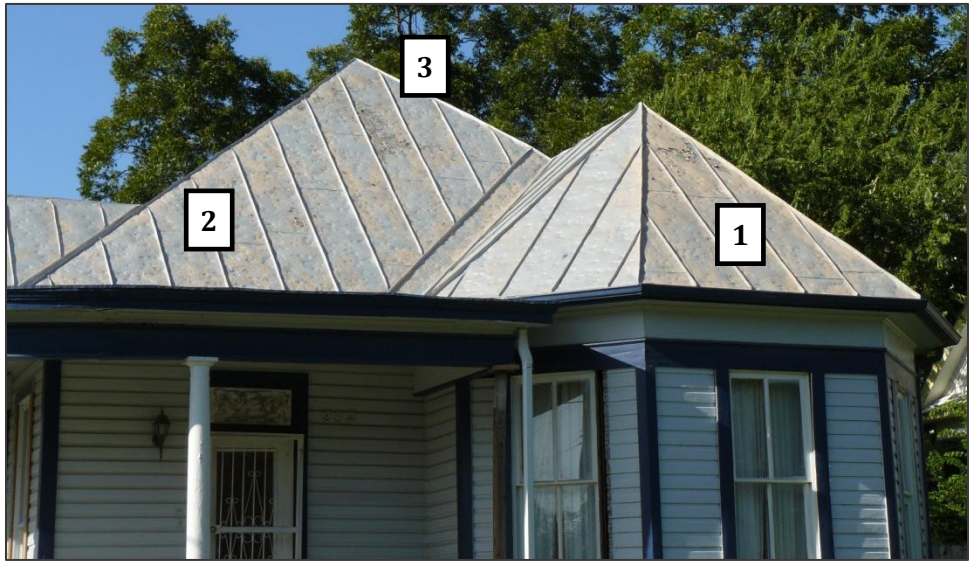
The Repair, Replacement and Maintenance of Historic Slate Roofs, Preservation Brief #29, by Jeffrey S. Levine.
<http://www.nps.gov/history/hps/tps/briefs/brief29.htm>

The Repair and Replacement of Historic Wooden Shingle Roofs, Preservation Brief #19, by Sharon C. Park, AIA.
<http://www.nps.gov/history/hps/tps/briefs/brief19.htm>

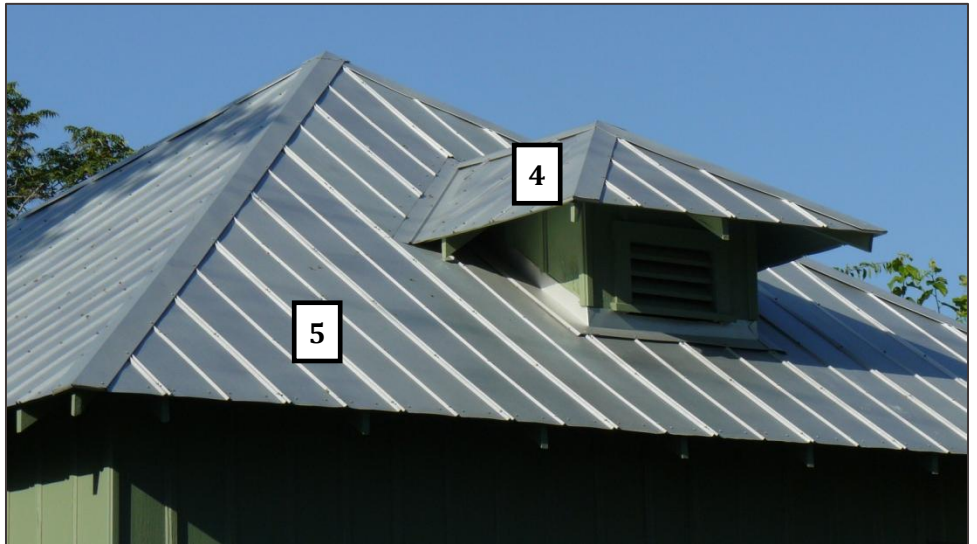
Checklist for Metal Roofs

New metal roofs that adhere to the guidelines below can be approved as long as documentation can be provided that shows that the home has historically had a metal roof or is of a style or construction period where a metal roof is appropriate.

- 1** Use panels that are 18 to 21 inches in width.
- 2** Ensure seams are an appropriate height for the slope of the roof (1 to 2 inches).
- 3** Use a crimped ridge seam that is consistent with the historic application.
- 4** Use a low-profile ridge cap with no ridge cap vent or end cap when a crimped ridge seam is not used.
- 5** Match the existing historic roof color or use the standard galvalume; modern manufacturer's colors are not recommended.



Historic standing seam metal roof with crimped ridges.



Example of appropriate v-crimp panels with external metal fasteners.



Do not use ridge caps with ridge cap vent (left) or end caps (right).

This page blank.

4. Materials: Metal

Why is this Important?

The use of metal on architectural features is common in many of San Antonio's districts and is an important character-defining feature. If properly maintained, metal features can last for centuries. However, improper maintenance and repair can result in deterioration. Where deterioration has already occurred, proper rehabilitation techniques can be used to restore the historic character of the metal.



This Art Deco apartment building features metal balconies and other details.



Decorative metal cresting adds to the character of this building and should be preserved. (Photo: Ron Bauml, San Antonio Conservation Society)

Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Cleaning**—Use the gentlest means possible when cleaning metal features to avoid damaging the historic finish. Prepare a test panel to determine appropriate cleaning methods before proceeding. Use a wire brush to remove corrosion or paint build up on hard metals like wrought iron, steel, and cast iron.
- ii. **Repair**—Repair metal features using methods appropriate to the specific type of metal.
- iii. **Paint**—Avoid painting metals that were historically exposed such as copper and bronze.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Replacement**—Replace missing or significantly damaged metal features in-kind or with a substitute compatible in size, form, material, and general appearance to the historical feature when in-kind replacement is not possible.
- ii. **Rust**—Select replacement anchors of stainless steel to limit rust and associated expansion that can cause cracking of the surrounding material such as wood or masonry. Insert anchors into the mortar joints of masonry buildings.
- iii. **New metal features**—Add metal features based on accurate evidence of the original, such as photographs. Base the design on the architectural style of the building and historic patterns if no such evidence exists.

Maintenance and Alteration Checklist for Metal

- 1** Clean metal detailing using the gentlest means possible to avoid damaging the historic finish.
- 2** Maintain paint on metal detailing or avoid painting metals that were historically exposed.
- 3** Do not introduce metal elements, such as this wrought iron railing, where they were not used historically.



(Top photo: Mary Striegel, ncptt.nps.gov)

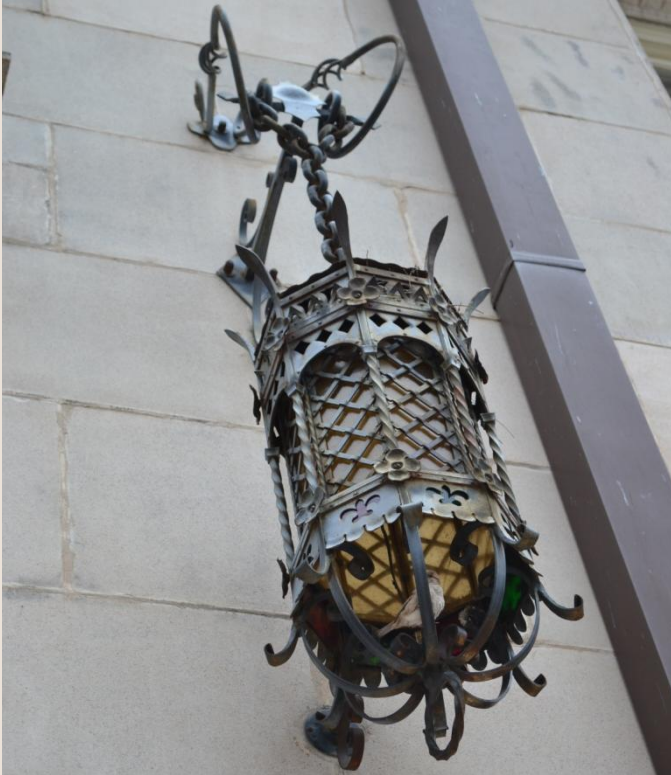
Additional Resources

The Maintenance and Repair of Architectural Cast Iron, Preservation Brief #27, by John G. Waite, AIA. <http://www.nps.gov/history/hps/tps/briefs/brief27.htm>

5. Architectural Features: Lighting

Why is this Important?

The unique details embodied in historic architectural features contribute to the overall character of a building and the district.



Historic light fixtures are unique and should be preserved to maintain the character of the building.

Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Lighting**—Preserve historic light fixtures in place and maintain through regular cleaning and repair as needed.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Rewiring**—Consider rewiring historic fixtures as necessary to extend their lifespan.
- ii. **Replacement lighting**—Replace missing or severely damaged historic light fixtures in-kind or with fixtures that match the original in appearance and materials when in-kind replacement is not feasible. Fit replacement fixtures to the existing mounting location.
- iii. **New light fixtures**—Avoid damage to the historic building when installing necessary new light fixtures, ensuring they may be removed in the future with little or no damage to the building. Place new light fixtures and those not historically present in locations that do not distract from the façade of the building while still directing light where needed. New light fixtures should be unobtrusive in design and should not rust or stain the building.

This page blank.

6. Architectural Features: Doors, Windows, and Screens

Why is this Important?

The proportion, shape, pattern, and size of historic doors, windows, and screens help convey the style and period of a building and contribute to its overall architectural character. In addition, the quality of construction of historic windows is generally much better than that of replacement windows and can be preserved through regular maintenance. Properly maintained and sealed historic windows are efficient and sustainable. Please see (12) *Increasing Energy Efficiency* on page 30 for more information.



These historic window screens are unique in design and contribute significantly to the character of the building.



The fanlight, detailing, and glazed area of this entrance help define the character of this public building.

Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Openings**—Preserve existing window and door openings. Avoid enlarging or diminishing to fit stock sizes or air conditioning units. Avoid filling in historic door or window openings. Avoid creating new primary entrances or window openings on the primary façade or where visible from the public right-of-way.
- ii. **Doors**—Preserve historic doors including hardware, fanlights, sidelights, pilasters, and entablatures.
- iii. **Windows**—Preserve historic windows. When glass is broken, the color and clarity of replacement glass should match the original historic glass.
- iv. **Screens and shutters**—Preserve historic window screens and shutters.
- v. **Storm windows**—Install full-view storm windows on the interior of windows for improved energy efficiency. Storm window may be installed on the exterior so long as the visual impact is minimal and original architectural details are not obscured.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Doors**—Replace doors, hardware, fanlight, sidelights, pilasters, and entablatures in-kind when possible and when deteriorated beyond repair. When in-kind replacement is not feasible, ensure features match the size, material, and profile of the historic element.
- ii. **New entrances**—Ensure that new entrances, when necessary to comply with other regulations, are compatible in size, scale, shape, proportion, material, and massing with historic entrances.
- iii. **Glazed area**—Avoid installing interior floors or suspended ceilings that block the glazed area of historic windows.
- iv. **Window design**—Install new windows to match the historic or existing windows in terms of size, type, configuration, material, form, appearance, and detail when original windows are deteriorated beyond repair.
- v. **Muntins**—Use the exterior muntin pattern, profile, and size appropriate for the historic building when replacement windows are necessary. Do not use internal muntins sandwiched between layers of glass.

- vi. **Replacement glass**—Use clear glass when replacement glass is necessary. Do not use tinted glass, reflective glass, opaque glass, and other non-traditional glass types unless it was used historically. When established by the architectural style of the building, patterned, leaded, or colored glass can be used.
- vii. **Non-historic windows**—Replace non-historic incompatible windows with windows that are typical of the architectural style of the building.
- viii. **Security bars**—Install security bars only on the interior of windows and doors.
- ix. **Screens**—Utilize wood screen window frames matching in profile, size, and design of those historically found when the existing screens are deteriorated beyond repair. Ensure that the tint of replacement screens closely matches the original screens or those used historically.
- x. **Shutters**—Incorporate shutters only where they existed historically and where appropriate to the architectural style of the house. Shutters should match the height and width of the opening and be mounted to be operational or appear to be operational. Do not mount shutters directly onto any historic wall material.



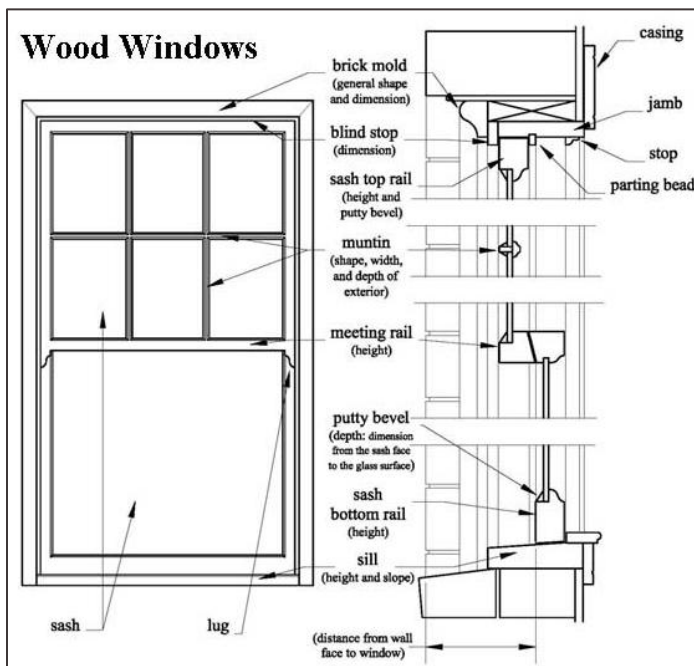
Why repair windows rather than replace them?

- Maintain the historic character of your house.
- Save money by repairing windows yourself rather than paying for replacement windows.
- Historic wood windows are made of durable materials and can last longer than replacement windows when properly maintained.
- Save energy in your home as well as the energy that it takes to make replacement windows.
- Reduce landfill debris.

Did you know?

Window Rehab Workshops offer hands on training to homeowners, students, and contractor to learn do-it-yourself techniques and proper maintenance for wood windows. Workshops are offered periodically by OHP.

Restored historic windows can be energy efficient and cost effective. More information on retaining historic windows is available on page 30.



Elements of wood windows (Diagram: NPS.gov).

This

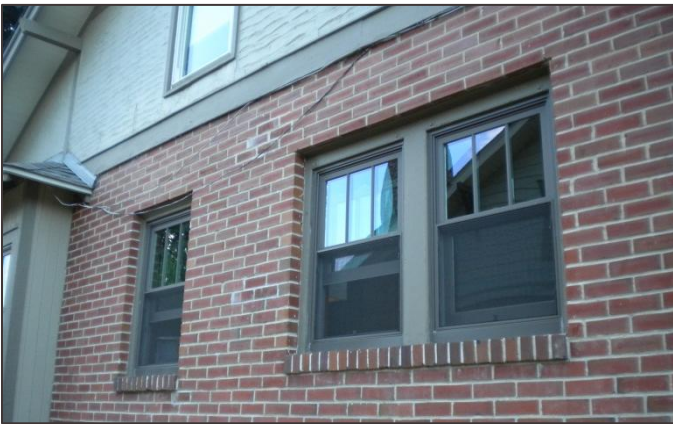


Repair historic windows when possible rather than replacing them. (Photo: San Antonio Office of Historic Preservation)

Not This



Do not reduce historic window openings to fit stock window sizes or use faux divided lights when replacement is necessary. (Photo: Ron Bauml, San Antonio Conservation Society)



Use the exterior muntin pattern, profile, and size appropriate for the historic building when replacement windows are necessary.



Do not use replacement windows, such as these vinyl inserts, that do not match the historic character of the building's original windows.



Maintain the character and symmetry of the façade by maintaining the historic window and door openings.



Do not alter the character and symmetry of the façade by filling historic window openings.



Additional Resources

OHP Links and workshops:

<http://sanantonio.gov/historic/Windows.aspx>

Guidance from the National Trust for Historic Preservation:

<http://www.preservationnation.org/information-center/sustainable-communities/weatherization/windows/>

<http://www.preservationnation.org/information-center/sustainable-communities/sustainability/additional-resources/July2008WindowsTipSheet.pdf>

Adding New Entrances to Historic Buildings, ITS #22, by Anne E. Grimmer. <http://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS22-NewEntrances.pdf>

New Openings on Secondary Elevations, ITS #21, by Anne E. Grimmer. <http://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS21-NewOpenings-SecondaryElevations.pdf>

Inappropriate Replacement Doors, ITS #4, by Anne E. Grimmer. <http://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS04-Doors-Replacement.pdf>

Selecting New Windows to Replace Non-Historic Windows, ITS #23, by Claire Kelly. <http://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS23-ReplaceWindows.pdf>

The Preservation and Repair of Historic Stained and Leaded Glass, Preservation Brief #33, by Neal A Vogel and Rolf Achilles. <http://www.nps.gov/history/hps/tps/briefs/brief33.pdf>

The Repair of Historic Wooden Windows, Preservation Brief #9, by John H. Meyers. <http://www.nps.gov/history/hps/tps/briefs/brief09.htm>

The Repair and Thermal Upgrading of Historic Steel Windows, Preservation Brief #13, by Sharon C. Park, AIA. <http://www.nps.gov/history/hps/tps/briefs/brief13.htm>

7. Architectural Features: Porches, Balconies, and Porte-Cocheres

Why is this Important?

In addition to being some of the most important character-defining elements of a façade, porches, balconies, and porte-cocheres provide a visual connection between building entrances and the public right-of-way, provide exterior living space, and protect users from the sun and other elements.



These downtown buildings feature full-width cantilevered balconies with decorative woodwork.



This building in Market Square features a wrap-around balcony with decorative woodwork.

Additional Resources

Inappropriate Porch Alterations, ITS #9, by Aleca Sullivan.
<http://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS09-Porch-Alterations.pdf>

Preserving Historic Wooden Porches, Preservation Brief #45, by Aleca Sullivan and John Leeke.
<http://www.nps.gov/history/hps/tps/briefs/brief45.htm>

Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Existing porches, balconies, and porte-cocheres**—Preserve porches, balconies, and porte-cocheres. Do not add new porches, balconies, or porte-cocheres where not historically present.
- ii. **Balusters**—Preserve existing balusters. When replacement is necessary, replace in-kind when possible or with balusters that match the originals in terms of materials, spacing, profile, dimension, finish, and height of the railing.
- iii. **Floors**—Preserve original wood or concrete porch floors. Do not cover original porch floors of wood or concrete with carpet, tile, or other materials unless they were used historically.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Front porches**—Refrain from enclosing front porches. Approved screen panels should be simple in design as to not change the character of the structure or the historic fabric.
- ii. **Side and rear porches**—Refrain from enclosing side and rear porches, particularly when connected to the main porch or balcony. Original architectural details should not be obscured by any screening or enclosure materials. Alterations to side and rear porches should result in a space that functions, and is visually interpreted as, a porch.
- iii. **Replacement**—Replace in-kind porches, balconies, porte-cocheres, and related elements, such as ceilings, floors, and columns, when such features are deteriorated beyond repair. When in-kind replacement is not feasible, the design should be compatible in scale, massing, and detail while materials should match in color, texture, dimensions, and finish.
- iv. **Adding elements**—Design replacement elements, such as stairs, to be simple so as to not distract from the historic character of the building. Do not add new elements and details that create a false historic appearance.
- v. **Reconstruction**—Reconstruct porches, balconies, and porte-cocheres based on accurate evidence of the original, such as photographs. If no such evidence exists, the design should be based on the architectural style of the building and historic patterns.

This



The architectural detailing of this porch has been preserved.

Not This



The enclosure of this front porch significantly alters the historic character of the building.



Original wood flooring on this porch is in good condition and will continue to be with proper maintenance.



Covering porches with tile or synthetic coverings like this turf can trap moisture and can lead to deterioration.



This historic porte-cochere matches the primary structure in form, detailing, and materials.



This carport has been added to this historic building to serve the same function as a historic porte-cochere, but distracts from the building's character.

8. Architectural Features: Foundations

Why is this Important?

Foundations are one of the most important features that enable the preservation of historic buildings because they maintain the structural integrity of a building. Without proper maintenance, foundations must be replaced through a labor-intensive process. Many historic houses in San Antonio have pier and beam foundations which are more costly up front but allow for easier and cheaper repairs than slab-on-grade foundations. Foundations also link the historic building to its site and the materials help define the architectural style.



Pier and beam foundations—both concrete (top) and cedar (bottom) are common in San Antonio. (Photos: Ron Bauml, San Antonio Conservation Society)

Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Details**—Preserve the height, proportion, exposure, form, and details of a foundation such as decorative vents, grilles, and lattice work.
- ii. **Ventilation**—Ensure foundations are vented to control moisture underneath the dwelling, preventing deterioration.
- iii. **Drainage**—Ensure downspouts are directed away and soil is sloped away from the foundation to avoid moisture collection near the foundation.
- iv. **Repair**—Inspect foundations regularly for sufficient drainage and ventilation, keeping it clear of vegetation. Also inspect for deteriorated materials such as limestone and repair accordingly. Refer to maintenance and alteration of applicable materials, for additional guidelines.

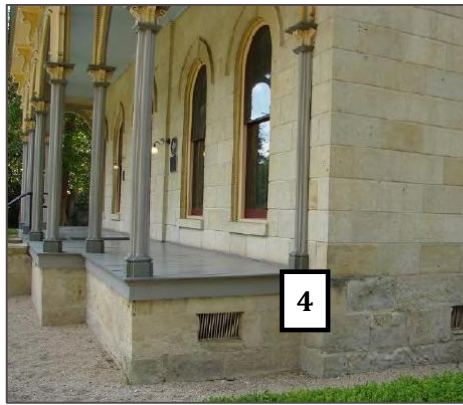
B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Replacement features**—Ensure that features such as decorative vents and grilles and lattice panels are replaced in-kind when deteriorated beyond repair. When in-kind replacement is not possible, use features matching in size, material, and design. Replacement skirting should consist of durable, proven materials, and should either match the existing siding or be applied to have minimal visual impact.
- ii. **Alternative materials**—Cedar piers may be replaced with concrete piers if they are deteriorated beyond repair.
- iii. **Shoring**—Provide proper support of the structure while the foundation is rebuilt or repaired.
- iv. **New utilities**—Avoid placing new utility and mechanical connections through the foundation along the primary façade or where visible from the public right-of-way.



Maintenance and Alteration Checklist for Foundations

- 1** Although pier and beam foundations—typically built with cedar piers—can shift over time, they can be more easily repaired than modern slab concrete foundations.
- 2** Concrete piers are a suitable replacement for cedar when original piers are deteriorated beyond repair.
- 3** Many limestone foundations can be restored rather than replaced.
- 4** Proper restoration and ventilation in this limestone foundation will prevent damage from moisture and ensure it lasts for many years to come.



Regular maintenance of limestone foundations will prevent the need for replacement. (Photos: Ron Bauml, San Antonio Conservation Society (bottom))

9. Outbuildings, Including Garages

Why is this Important?

Outbuildings help define the character of the district and reinforce the character of the principle historic building. They help tell the story of our neighborhoods and remind us of a time when life was not centered around automobiles. Historic outbuildings in San Antonio are limited in number and declining rapidly.



Historic outbuildings contribute significantly to the character of San Antonio's historic districts. Although not many remain, those that do remain should be preserved.



This outbuilding is consistent with the character of the principal structure and contributes to the overall character of the property.

Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Existing outbuildings**—Preserve existing historic outbuildings where they remain.
- ii. **Materials**—Repair outbuildings and their distinctive features in-kind. When new materials are needed, they should match existing materials in color, durability, and texture. Refer to maintenance and alteration of applicable materials above, for additional guidelines.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Garage doors**—Ensure that replacement garage doors are compatible with those found on historic garages in the district (e.g., wood paneled) as well as with the principal structure. When not visible from the public right-of-way, modern paneled garage doors may be acceptable.
- ii. **Replacement**—Replace historic outbuildings only if they are beyond repair. In-kind replacement is preferred; however, when it is not possible, ensure that they are reconstructed in the same location using similar scale, proportion, color, and materials as the original historic structure.
- iii. **Reconstruction**—Reconstruct outbuildings based on accurate evidence of the original, such as photographs. If no such evidence exists, the design should be based on the architectural style of the primary building and historic patterns in the district. Add permanent foundations to existing outbuildings where foundations did not historically exist only as a last resort.

This



This new garage is discretely located behind the primary structure and is designed to match its historic character.

Not This



This new garage is not consistent with the material or character of the historic home.



These highly visible garage doors were replaced with doors similar in character to the ones beyond repair.



A metal replacement garage door is not historically accurate and distracts from the character of this historic garage.



This historic garage has been sensitively modified to incorporate a modest accessory dwelling above it.



This new garage does not relate to the primary structure in terms of its architectural detail or material.

10. Commercial Facades

Why is this Important?

Design elements typical of commercial facades, such as large, transparent display windows and recessed entrances, provide significant visual interest, and help define and create an engaging pedestrian realm.



Many of San Antonio's historic districts feature small-scale commercial facades similar to the examples above. While basic design elements (e.g., display windows, prominent entrances) are similar, architectural details vary by location.

Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Character-defining features**—Preserve character-defining features such as cornice molding, upper-story windows, transoms, display windows, kickplates, entryways, tiled paving at entryways, parapet walls, bulkheads, and other features that contribute to the character of the building.
- ii. **Windows and doors**—Use clear glass in display windows. See Guidelines for Architectural Features: Doors, Windows, and Screens for additional guidance.
- iii. **Missing features**—Replace missing features in-kind based on evidence such as photographs, or match the style of the building and the period in which it was designed.
- iv. **Materials**—Use in-kind materials or materials appropriate to the time period of the original commercial facade when making repairs.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **New features**—Do not introduce new facade elements that alter or destroy the historic building character, such as adding inappropriate materials; altering the size or shape of windows, doors, bulkheads, and transom openings; or altering the facade from commercial to residential. Alterations should not disrupt the rhythm of the commercial block.
- ii. **Historical commercial facades**—Return non-historic facades to the original design based on photographic evidence. Keep in mind that some non-original facades may have gained historic importance and should be retained. When evidence is not available, ensure the scale, design, materials, color, and texture is compatible with the historic building. Consider the features of the design holistically so as to not include elements from multiple buildings and styles.



Commercial facades in San Antonio's historic districts vary dramatically in scale and character.

Maintenance and Alteration Checklist for Commercial Facades

- 1 Maintain decorative façade elements such as this pediment wall.
- 2 Maintain the proportions of upper-story windows.
- 3 Avoid filling original window openings or reducing their transparency through the use of tinted glass or other view obstructing features.
- 4 Do not alter the width or door configuration of historic entrances.
- 5 Preserve historic canopies.
- 6 Avoid applying stucco or paint finish to historically unfinished surfaces, consider removing non-historic paint using the gentlest means possible.
- 7 Maintain historic bulkhead.
- 8 Use only clear glass in storefront windows to maintain transparency.
- 9 Maintain recessed entrances and original doors.

Additional Resources

Designing Compatible Replacement Storefronts, ITS #49, by Anne E. Grimmer.
<http://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS49-Storefronts-Compatible.pdf>

Rehabilitating Historic Storefronts, Preservation Brief #11, by H. Ward Jandl.
<http://www.nps.gov/history/hps/tps/briefs/brief11.htm>

Repair/Replacement of Missing or Altered Storefronts, ITS #13, by Anne E. Grimmer.
<http://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS13-Storefronts-Repair.pdf>

Replacement of Missing or Altered Storefronts, ITS #48, by Anne E. Grimmer.
<http://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS48-Storefronts-Replacement.pdf>

11. Canopies and Awnings

Why is this Important?

In addition to providing architectural interest, historic canopies and awnings help define the pedestrian realm and protect pedestrians and window displays from the sun and other elements.



Many of San Antonio's historic commercial buildings feature simple canopies and awnings designed to protect the pedestrian realm.

Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Existing canopies and awnings**—Preserve existing historic awnings and canopies through regular cleaning and periodic inspections of the support system to ensure they are secure.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Replacement canopies and awnings**—Replace canopies and awnings in-kind whenever possible.
- ii. **New canopies and awnings**—Add canopies and awnings based on accurate evidence of the original, such as photographs. If no such evidence exists, the design of new canopies and awnings should be based on the architectural style of the building and be proportionate in shape and size to the scale of the building façade to which they will be attached. See UDC Section 35-609(j).
- iii. **Lighting**—Do not internally illuminate awnings; however, lighting may be concealed in an awning to provide illumination to sidewalks or storefronts.
- iv. **Awning materials**—Use fire-resistant canvas awnings that are striped or solid in a color that is appropriate to the period of the building.
- v. **Building features**—Avoid obscuring building features such as arched transom windows with new canopies or awnings.
- vi. **Support structure**—Support awnings with metal or wood frames, matching the historic support system whenever possible. Minimize damage to historic materials when anchoring the support system. For example, anchors should be inserted into mortar rather than brick. Ensure that the support structure is integrated into the structure of the building as to avoid stress on the structural stability of the façade.



Maintenance and Alteration Checklist for Canopies and Awnings

1

Preserve existing historic awnings and canopies through regular cleaning and periodic inspections of the support system to ensure they are secure.

2

New canopies and awnings should be based on the architectural style of the building and be proportionate in shape and size to the scale of the building façade to which they will be attached.



Typical canopies and awnings in San Antonio's historic districts include both metal storefront canopies and fabric awnings.

Additional Resources

Adding Awnings to Historic Storefronts and Entrances, ITS #27, by Chad Randal. <http://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS27-Storefronts-AddingAwnings.pdf>

The Use of Awnings on Historic Buildings – Repair, Replacement & New Design, Preservation Briefs #44, by Chad Randal. <http://www.nps.gov/history/hps/tps/briefs/brief44.htm>

12. Increasing Energy Efficiency

Why is this Important?

Taking steps to improve the efficiency of historic homes to reduce heating and cooling costs can minimize the need to replace historic elements with non-historic ones that may interfere with the original character of the building.



Applying solar window film can block more than half of the solar heat that would otherwise enter the building. (Photo: Belkys Perez, Coral Gables Community Newspaper)



Applying glazing putty to historic windows helps make them weather tight reducing heat loss and gain.

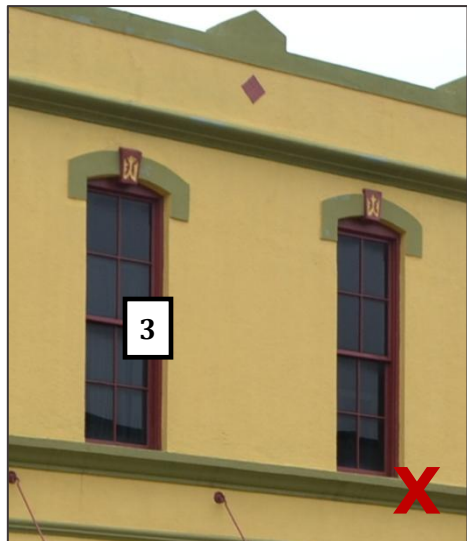
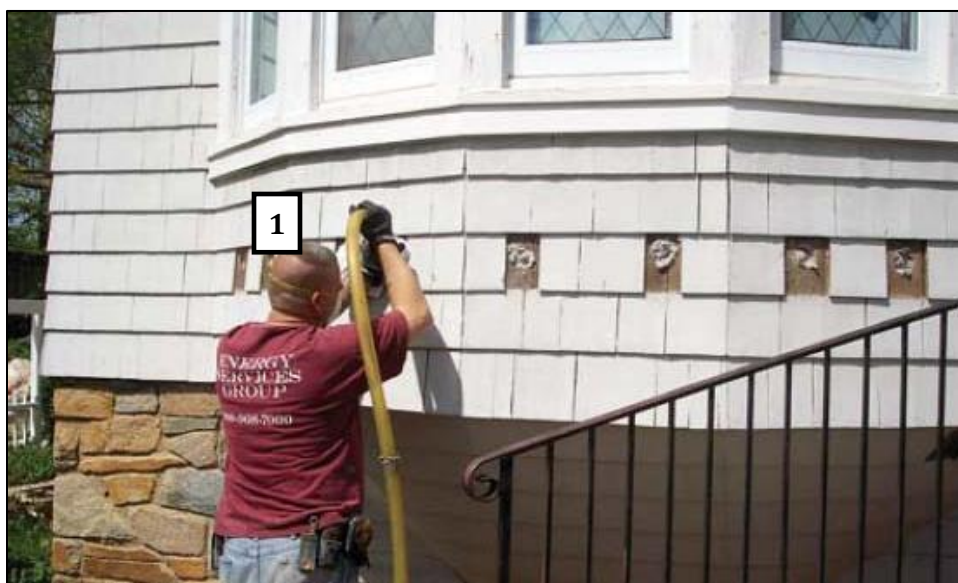
Guidelines

A. MAINTENANCE (PRESERVATION)

- i. **Historic elements**—Preserve elements of historic buildings that are energy efficient including awnings, porches, recessed entryways, overhangs, operable windows, and shutters.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. **Weatherization**—Apply caulking and weather stripping to historic windows and doors to make them weather tight.
- ii. **Thermal performance**—Improve thermal performance of windows, fanlights, and sidelights by applying UV film or new glazing that reduces heat gain from sunlight on south and west facing facades only if the historic character can be maintained. Do not use reflective or tinted films.
- iii. **Windows**—Restore original windows to working order. Install compatible and energy-efficient replacement windows when existing windows are deteriorated beyond repair. Replacement windows must match the appearance, materials, size, design, proportion, and profile of the original historic windows.
- iv. **Reopening**—Consider reopening an original opening that is presently blocked to add natural light and ventilation.
- v. **Insulation**—Insulate unfinished spaces with appropriate insulation ensuring proper ventilation, such as attics, basements, and crawl spaces.
- vi. **Shutters**—Reinstall functional shutters and awnings with elements similar in size and character where they existed historically.
- vii. **Storm windows**—Install full-view storm windows on the interior of windows for improved energy efficiency.
- viii. **Cool roofs**—Do not install white or “cool” roofs when visible from the public right-of-way. White roofs are permitted on flat roofs and must be concealed with a parapet.
- ix. **Roof vents**—Add roof vents for ventilation of attic heat. Locate new roof vents on rear roof pitches, out of view of the public right-of-way.
- x. **Green Roofs**—Install green roofs when they are appropriate for historic commercial structures.



(Top Photo: Improving Energy Efficiency in Historic Buildings, National Park Service)

Maintenance and Alteration Checklist for Increasing Energy Efficiency

- 1** Insulate buildings using minimally invasive techniques to improve energy efficiency. Appropriate insulation techniques vary based on the type of construction and should be selected in consultation with a contractor specializing in historic home maintenance. Moisture problems within the wall cavity should be addressed prior to adding any sort of insulation. Blown-in insulation may retain entering moisture, ultimately leading to rot and decay.
- 2** Retain awnings to reduce heat gain from sun exposure.
- 3** Add UV film to windows to reduce solar gain on south and west-facing facades, but avoid tinted (shown) or mirrored films.

Additional Resources

The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings, published by the National Park Service, Technical Preservation Services.

<http://www.nps.gov/tps/standards/rehabilitation/sustainability-guidelines.pdf>

Improving Energy Efficiency in Historic Buildings, Preservation Brief #3, by Jo Ellen Hensley and Antonio Aguilar.

<http://www.nps.gov/history/hps/tps/briefs/brief03.pdf>

Energy Efficiency, Technical Preservation Services, National Park Service.

<http://www.nps.gov/tps/sustainability/energy-efficiency.htm>

Preservation Green Lab, National Trust for Historic Preservation.

<http://www.preservationnation.org/information-center/sustainable-communities/sustainability/green-lab/>

Retaining Historic Windows

Windows are character-defining features of historic buildings and are important in maintaining the historic look and feel of a property. Current information often recommends replacing windows in the name of environmental efficiency and weatherization. While these are important issues, the end result of increased efficiency can often be achieved by repairing historic wood windows rather than removing and replacing them. The greenest material is the material that is already there. Removal of historic windows contributes to increased land fill, and the manufacture of replacement windows that contain vinyl or PVC produces toxic by-products that can harm the environment.

According to the U.S. Department of Energy, a larger percentage of air infiltration (energy loss) occurs through uninsulated walls, floors, and roofs, than through windows. Insulating attics and crawl spaces can significantly reduce air infiltration and improve building efficiency in our hot climate.

Historic wood windows (constructed before 1940) are made from old-growth wood that is far more durable and resistant to rot and warping than modern lumber and will last longer than modern wood replacements. Historic wood windows are composed of individual parts, rather than a single unit, and are designed to be repaired rather than replaced. Keeping wood windows painted will significantly reduce deterioration from moisture and weather. Simple means such as replacing weather stripping and caulking, repairing glazing putty, and refitting window locks for a tight seal can all improve efficiency and prolong the life of historic wood windows. Storm windows are another option. These can be installed on the interior or exterior and are easily removed.

Replacement windows are often advertised as “maintenance free,” but most replacement windows are produced as a single unit and are not easily repaired when a part breaks. Replacement windows will eventually fail and require entire new window systems to be installed. Vinyl windows can fade and warp in UV light and extreme temperatures. There is a reason replacement windows are called “replacement.” Historic wood windows, on the other hand, have survived for decades and with proper maintenance and care will continue to function for many more.

Historic wood windows reflect the style and era of the building for which they were constructed. The distinct light (or pane) patterns, the slim profile of the wood muntins separating the panes, and even the visible appearance of old glass all contribute to the historic feel of a property. Removal of original windows undermines the integrity of a historic property. This is an irreversible loss.



For more information, visit: www.sanantonio.gov/historic/windows.aspx

